

SECTION VI.—RETAIL PRICES, HOUSE RENTS, AND COST OF LIVING.

1. **Introduction.**—In Report No. 1, issued in December, 1912, the results of certain investigations into the subjects of Prices, Price-Indexes and Cost of Living in past years were published, and some account was given of the methods employed for the collection of the data and of the technique adopted in the computation of the results. An important discussion of the theory upon which the calculation of the index-numbers is based was given, but being necessarily too technical for the ordinary reader, was relegated to Appendixes.

It must here suffice to state that the method adopted for the computation of the index-numbers is what may very properly be called the "aggregate expenditure" method. The first process is, of course, to work out the average price of each commodity included, and numbers (called "mass-units") representing the *relative* extent to which each commodity was on the average used or consumed are then computed. The price in any year of each commodity multiplied by its corresponding "mass-unit" represents, therefore, the relative total expenditure on that commodity in that year *on the basis of the adopted regimen*. It follows, therefore, that by taking for any year the sum of the price of each commodity multiplied by its corresponding "mass-unit" a figure is obtained which represents the relative aggregate or total expenditure of the community in that year on all the commodities, etc., included. By computing these aggregate expenditures for a series of years and taking the expenditure in any desired year as "base," that is, making the expenditure in that year equal to 1000 units, the relative expenditure in any other year, that is to say, the "index-numbers," are readily ascertained.

As explained in the report, the mass-units, that is, the relative extent to which each commodity is used or consumed, are taken as being constant during the whole period under review.

In order to clearly illustrate the method adopted it will be well to take a simple numerical example. Suppose that in 1901 the average price of butter was 1s. 3d. per lb., of bread was 3d. per 2lb. loaf, of mutton was 3d. per lb., and of milk was 4d. per quart; and suppose that in 1911 the prices of these four commodities were 1s. 6d. for butter, 4d. for bread, 5d. for mutton, and 5d. for milk. Now the total quantities of each of these commodities consumed in Australia per annum are approximately 90 million lb. of butter, 470 million 2lb. loaves of bread, 330 million lb. of mutton, and 300 million quarts of milk. Therefore, the actual expenditure of the people of Australia on these commodities in 1901 and 1911 respectively would be as follows:—

Computation of Index-Numbers : Illustrative Example of Aggregate Expenditure Method.

Particulars.	Unit.	Quantities Consumed (0,000,000 omitted).	Prices.		Total Expenditures.	
			1901.	1911.	1901.	1911.
			<i>d.</i>	<i>d.</i>	<i>d.</i>	<i>d.</i>
			(0,000,000 omitted)	(0,000,000 omitted)	(0,000,000 omitted)	(0,000,000 omitted)
Butter ..	lb	9	15	18	135	162
Bread ..	2lb. loaf	47	3	4	141	188
Mutton ..	lb.	53	3	5	99	165
Milk ..	quart	30	4	5	120	150
					495	665

The relative aggregate expenditure was 495 in 1901, and rose to 665 in 1911; in other words, the index-number in 1901, taking the expenditure in 1911 as the base ($= 1000$) was $\frac{495}{665} \times 1000 = 744$, and the index-number in 1911, taking the expenditure in 1901 as the base ($= 1000$) was $\frac{665}{495} \times 1000 = 1343$, which might, of course, have been obtained directly by taking the reciprocal of the result previously obtained. If now, instead of only four commodities, a representative group of fifty or more were treated in this way for a series of years, the numbers thus obtained would furnish a satisfactory index of the variations in price from year to year.

In Report No. 1, particulars were given shewing the results of the investigation, including the first nine months of the year 1912. In this report figures for the whole of that year are included. In the future it is intended to publish price index-numbers quarterly, with a more comprehensive report each year.

2. **Scope of Investigation.**—It was pointed out in Report No. 1 that, in any investigation into the question of change in cost of living of a community, a careful distinction must be drawn between two things, viz. :—

- (a) Variations in the *purchasing power* of money, and
- (b) Variations in the *standard of living*.

The second element (b) can be limited, at any rate to some extent, by the exercise of self denial and thrift, and such limitation is at the disposal of each individual; the former (a) is not subject to this possibility. Thus, from this aspect, social economics are concerned *primarily* with an accurate estimation of variations in the purchasing power of money and only secondarily with the question of the general standard of living which has been reached. The first desideratum demands that we shall select a suitable list of commodities, the quantities of each being taken in due proportion to their relative average consumption, and, keeping this list with the quantities constant, ascertain what it costs to purchase the whole group. In this way we can compare the cost in different areas or districts at the same time, as well as the variation in any one place from time to time. This is the "aggregate expenditure" method explained above.

Before any useful discussion can take place as to *causes* of change, it is evident that the change itself must be accurately measured. To determine such measurements is one of the appropriate functions of a statistical office; to assign causes may or may not be outside the scope of the work of such an office, according as the causes can be determined by statistical data or otherwise. Loose general ideas as to changes in purchasing power are of little value, and the object of a research into the question is to ascertain (a) what commodities should be included, (b) the relative quantities of each consumed, (c) the prices paid, and (d) the aggregate expenditures, i.e., what it costs to purchase the whole group.

Having determined the variations in *purchasing power*, it is hoped to further investigate at an early date the question of change in *standard of living* from time to time by the collection of householders' budgets* and other means.

As explained in Report No. 1, special steps were taken to conduct the investigation back as far as 1901 for the capital towns only. The collection of current monthly returns as to prices and of quarterly returns of house rents commenced in thirty of the more important towns of the Commonwealth in January, 1912.

3. Commodities and Requirements Included.—The 47 items of expenditure included have been divided into four groups, viz.—(a) groceries and bread, (b) dairy produce, (c) meat, and (d) house rent. The omission of clothing, fuel and light, travelling, amusements, etc., may on a superficial examination appear to limit the value of the results. Against this, reasons for which these items have been omitted were given in Report No. 1†, and it was explained that index-numbers based on these four groups satisfactorily reflect the general rise and fall in cost of living. It should, moreover, be pointed out that whereas the expenditure on the four groups included amounts to no less than 45 per cent. on the total expenditure, cost of clothing amounts to only 12 per cent., and of fuel and light to as little as 3 per cent. It follows therefore that before the index-numbers, based on the four groups, can cease to truly reflect variations in general purchasing value, changes in the price of clothing must have departed very widely, one way or the other, from the general change which has occurred. This applies still more forcibly, of course, to changes in price of fuel and light. Since prices of nearly all commodities generally move in the same direction, it is obvious that the validity of the index-numbers, based on the four groups referred to, can be vitiated only under a quite abnormal state of affairs, and even then only to a slight extent.

The following tabular statement gives particulars of the commodities and items included, the units of measurement for which prices are collected, and the mass-units shewing the relative extent to which each item is used or consumed.

* See Report on an "Inquiry into the Cost of Living in Australia, 1910-11," by G. H. Knibbs C.M.G., etc., December, 1911. Owing to the small number of budgets returned, the deductions and tabulations based thereon are necessarily restricted.

† See "Prices, Price-Indexes and Cost of Living in Australia," Labour and Industrial Branch Report No. 1, by G. H. Knibbs, C.M.G., F.S.S., etc., December, 1912, pp. 15 to 20.

Retail Prices.—Table showing Commodities, etc., included in Investigation, Units of Measurement, and "Mass-Units."

Commodity.	Unit.	"Mass Unit."	Commodity.	Unit.	"Mass Unit."
GROUP I.—GROCERIES (INCLUDING BREAD).			GROUP III.—MEAT.		
1. Bread	2 lb. loaf	468	26. Beef, sirloin	lb.	67
2. Flour, ordinary	25 lb. bags	11	27. " rib	"	82
3. Tea	lb.	30	28. " flank	"	12
4. Coffee	"	2	29. " shin	"	14
5. Sugar	"	460	30. " steak, rump	"	24
6. Rice	"	50	31. " shoulder	"	53
7. Sago	"	8	32. " buttock	"	53
8. Jam	"	73	33. " corned round	"	39
9. Oatmeal	"	35	34. " brisket, with		
10. Raisins	"	14	bone	"	11
11. Currants	"	14	35. " " without		
12. Starch	"	1	bone	"	32
13. Blue	doz. sqs.	$\frac{1}{2}$	36. Mutton, leg	"	92
14. Candles	lb.	16	37. " shoulder	"	62
15. Soap	"	64	38. " loin	"	30
16. Potatoes	14 lbs.	64	39. " neck	"	40
17. Onions	lb.	68	40. " chops, loin	"	62
18. Kerosene	gallon	17	41. " leg	"	15
GROUP II.—DAIRY PRODUCTS.			42. " neck	"	31
19. Milk	quart	300	43. Pork, leg	"	9 $\frac{1}{2}$
20. Butter	lb.	95	44. " loin	"	8 $\frac{1}{2}$
21. Cheese	"	15	45. " belly	"	10 $\frac{1}{2}$
22. Eggs	dozen	18	46. " chops	"	8 $\frac{1}{2}$
23. Bacon, middles	lb.	16	GROUP IV.—HOUSE RENT.		
24. Bacon, shoulder	"	16	47. House Rent	per 'w'k.	46 $\frac{1}{2}$
25. Ham	"	8			

It may here be pointed out that both in the collection of the data and computation of the results great care was exercised, and that there is reason to believe that the cost of living figures are based upon more extensive data than any which have been obtained in similar investigations in other parts of the world.

In order to give some idea of the thorough manner in which the work has been performed, it may be mentioned that with regard to the 46 commodities and house rents included in the cost of living inquiry, nearly 10,500 prices and quotations were received and tabulated for the 30 towns dealt with each month. This amounts to 126,000 per annum. The complete scheme in regard to cost of living provides for the collection and analysis of over 140,000 separate prices and quotations each year, but owing to the difficulty in getting in all the returns regularly it was necessary to provide for a larger number of returns than were actually required.

When it is understood that the cost of living inquiry goes back for the capital towns as far as 1901, and the wholesale price inquiry (80 commodities) as far as 1871, some idea may be gathered as to the

magnitude of the work involved. All the returns received were carefully examined, and in cases where any price or quotation was inconsistent or doubtful special inquiries were made from the person furnishing the return, thus affording guarantees of the accuracy of the tabulated results. It is believed, therefore, that a high degree of accuracy has been obtained in the present investigation, and it is evident that personal impressions or results not based upon an equally systematic and equally extensive inquiry cannot be allowed weight.

4. Variations in Cost of Living in each Metropolitan Town, 1901 to 1912.—It is obvious that the variations in prices of commodities included in the food and groceries groups may be of a very different nature to movements in cost of housing accommodation, and for that reason index-numbers have been computed—firstly, for the first three groups (food and groceries) combined; secondly, for house rent; and thirdly, for all groups taken together. These index-numbers are shewn for the capital town of each State in the tables given hereinafter. In addition a weighted average index-number for all the capital towns combined has been computed by weighting the index-number for each town by a number representing its population. In each case the index-numbers have been computed with expenditure according to average prices in the year 1911 as base, that is to say, *the figures shew the number of units which would have had to be expended, according to the average prices prevailing in each specified year, in order to purchase such commodities, or to pay such amounts for rent, as would, according to the average prices in 1911, have cost 1000 units.*

It should be observed that these index numbers do not in any way shew the relative purchasing power of money or cost of living as between the several capital towns; they merely shew the relative cost from year to year in each town independently. In other words, comparisons can be made between the numbers in the *horizontal lines*, but cannot be made *directly* between those in the *vertical columns*. That they are not directly comparable vertically is immediately evident when it is remembered that the expenditure in each town in 1911 (and the weighted average expenditure for all towns) is represented by the one figure—1000—though actually the expenditure is not, of course, the same in each town. The question of the *relative cost in different towns* in the Commonwealth is dealt with hereinafter.

Index-numbers for food and groceries, and for rent, and for all groups and rent together, are given separately in the following paragraphs.

(i.) *Food and Groceries.*—The results obtained from the three groups referred to above have been combined, so as to shew a weighted average for groceries and food. The results are of importance as shewing the aggregate effect on the cost of living of the movements in prices of commodities, apart from variations in house-rent. The index-numbers thus computed for the three groups are shown in the following table. Since they are reversible, the necessary calculations for any other year as base can readily be made (see paragraph (iv.) hereof).

**Retail Prices in Metropolitan Towns, Index-Numbers for Groceries and Food
(Groups I., II. and III.), 1901 to 1912.**

TOWN	1901	1902.	1903.	1904.	1905.	1906	1907.	1908	1909.	1910	1911.	1912
Sydney	927	1,078	1,040	886	982	974	946	1,041	1,023	1,011	1,000	1,136
Melbourne	1,032	1,085	1,041	980	1,018	1,010	989	1,084	1,015	1,026	1,000	1,156
Brisbane	948	998	970	877	928	943	930	1,006	966	983	1,000	1,082
Adelaide	1,008	1,007	963	922	974	963	933	990	1,006	982	1,000	1,132
Perth	880	946	953	890	935	919	890	911	901	930	1,000	999
Hobart	955	992	996	927	973	990	955	997	1,033	1,015	1,000	1,125
Weighted Average*	972	1,056	1,010	924	986	980	955	1,031	1,006	1,005	1,000	1,129

* For all capital towns

NOTE.—The above figures are comparable horizontally, but are not directly comparable in the vertical columns. The index-numbers are reversible.

The price indexes for groceries and food are shewn by the broken lines on the graphs on pages 50 and 51 in relation to the price-indexes for house rent alone, and to the weighted averages for all groups. It may be seen that there is considerable similarity between the graphs for Sydney, Melbourne and Brisbane, the price-level being high in 1902, 1908, and 1912, and low in 1904. The fluctuations are more marked in Sydney than in either of the other two towns. In all the capital towns prices for groceries and food reached their maximum in 1912, and, reviewing the whole of the period, it may be seen that, broadly speaking, prices have tended to move upward. This upward tendency is most marked in Perth, Adelaide and Brisbane, and is least noticeable in Melbourne.

On the pages referred to, graphs are also shewn separately for each of the groups I., II., and III. The actual index-numbers since 1901 for each group were given in Report No. 1, and are not repeated here. The following table, however, shews for each of these three groups the index-numbers for 1912, compared with 1911 as base (= 1000).

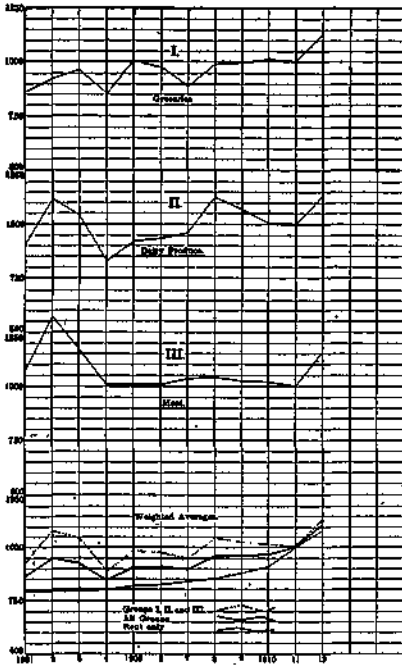
Retail Prices in Metropolitan Towns, Index-Numbers for Groceries, Dairy Produce and Meat in 1912 compared with 1911 as base (= 1,000.)

Particulars.	Sydney.	Melb	Brisbane	Adelaide	Perth.	Hobart	Weighted Average.
Price Indexes in 1911 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Price Indexes in 1912—							
I. Groceries ..	1,130	1,148	1,099	1,188	930	1,166	1,129
II. Dairy Produce ..	1,131	1,123	1,073	1,091	1,064	1,108	1,114
III. Meat ..	1,155	1,208	1,060	1,090	1,042	1,082	1,150
Groups I., II., and III. combined ..	1,136	1,156	1,082	1,132	999	1,125	1,129

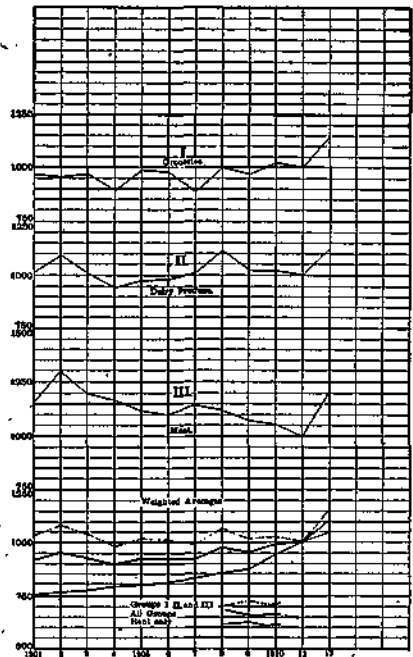
The increase in 1912 was greatest in Sydney and Melbourne in Group III. (Meat), amounting to over 15 and nearly 21 per cent. respectively. In the other towns, except Perth, the increase is most marked in Group I. (Groceries), amounting to over 18 per cent. in Adelaide, and 16 per cent. in Hobart. Perth is the only town for which a fall was registered—viz., in Group I. In that town prices were steady during 1912, the net result for the three groups shewing a slight fall (999, as compared with 1000 for the previous year).

RETAIL PRICES, HOUSE RENT, AND COST OF LIVING IN METROPOLITAN TOWNS.
GRAPHS 1901 TO 1912.

SYDNEY.

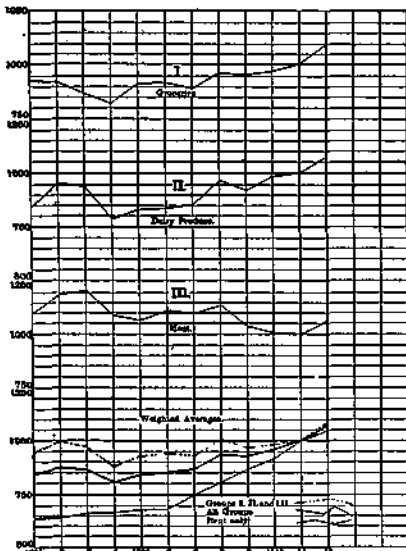


MELBOURNE.

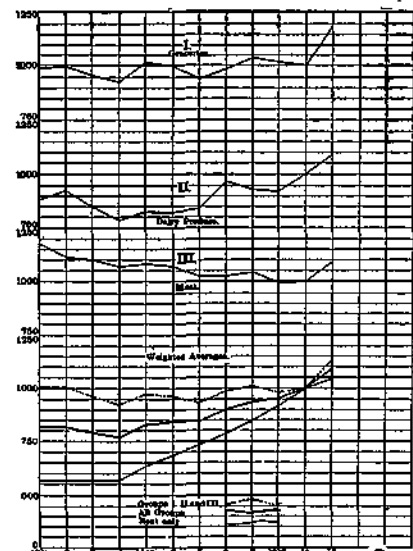


RETAIL PRICES, HOUSE RENT, AND COST OF LIVING IN METROPOLITAN TOWNS.
GRAPHS 1901 TO 1912.

BRISBANE.

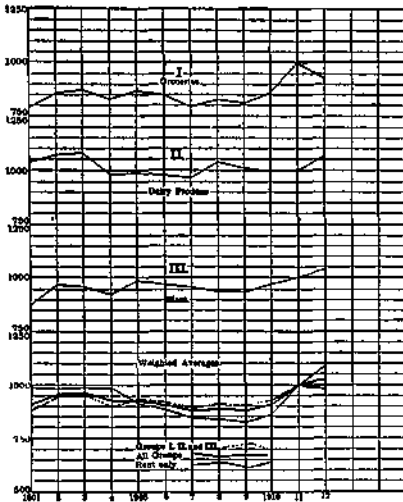


ADELAIDE.

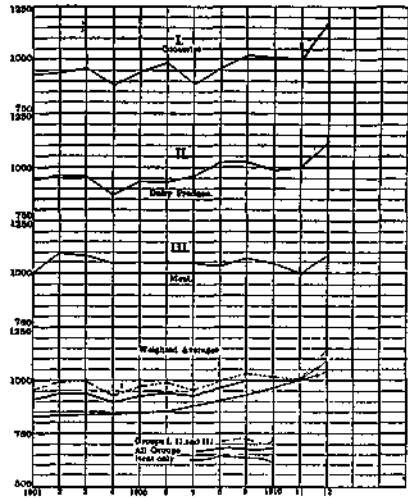


RETAIL PRICES, HOUSE RENT, AND COST OF LIVING IN METROPOLITAN TOWNS
 GRAPHS, 1901 TO 1912.

PERTH AND FREMANTLE



HOBART.



The increase for the three groups combined was greatest in Melbourne, followed, in the order named, by Sydney, Adelaide, Hobart and Brisbane. It is obvious, of course, that the conditions governing prices in Perth, where there was a small fall in price level, are in many respects very different to those in the Eastern States.

(ii) *House Rent.*—In the following table index-numbers are given computed for the weighted average house rent in each of the capital towns from 1901 to 1912, taking the average rent in 1911 as the base (= 1000). The average rent has been obtained for each town separately by multiplying the average predominant rent for each class of house (*i.e.*, houses having less than 4 rooms, 4 rooms, 5 rooms, 6 rooms, 7 rooms, and over 7 rooms) by a number ("weight") representing the relative number of houses of that class in the particular town. The sum of the products thus obtained, divided by the sum of the weights, gives the weighted average for all houses.* The number of houses in each class for each town was obtained from the results of the 1911 Census. It should be observed, therefore, that these index-numbers

* The process may be illustrated mathematically as follows:—If a_1, a_2, a_3, \dots etc. be the average predominant rents in any town for houses of under 4 rooms, 4 rooms, 5 rooms, etc., respectively, and if n_1, n_2, n_3, \dots etc. be the corresponding numbers of houses of each such class in that town, then the weighted average rent = $\frac{n_1 a_1 + n_2 a_2 + n_3 a_3 + \dots}{n_1 + n_2 + n_3 + \dots} = \frac{\sum (n a)}{N}$, where N = the total number of houses in the town.

are based on the weighted average rents for all houses, and that they do not refer to any particular class of houses. The actual predominant rents for each class were given in an appendix to Report No. 1, and an examination of these figures shews that for some classes of houses the increase has been greater, and in some less, than the general increase indicated in the following table.

House Rents in Metropolitan Towns, Index-Numbers shewing Weighted Average Rents (Group IV.), 1901 to 1912.

TOWN.	1901.	1902.	1903	1904	1905.	1906	1907.	1908.	1909	1910.	1911.	1912.
Sydney ..	792	792	794	797	818	822	840	851	880	910	1,000	1,085
Melbourne ..	756	767	771	788	795	806	820	854	868	945	1,000	1,047
Brisbane ..	637	641	660	662	676	683	750	803	862	912	1,000	1,048
Adelaide ..	560	566	566	566	631	684	730	784	845	916	1,000	1,043
Perth ..	988	982	989	985	912	883	844	837	823	859	1,000	1,086
Hobart ..	820	831	836	838	846	852	880	904	931	964	1,000	1,030
Weighted Average*	755	759	763	770	784	794	818	841	868	921	1,000	1,063

* For all capital towns.

NOTE.—The figures in the above table are comparable horizontally, but are not directly comparable in the vertical columns. The index-numbers are reversible.

The above figures are shewn on the graphs on pages 50 and 51, in relation to the combined price-indexes for the other groups, and for all groups together. It may be seen that, except in Adelaide, where rents remained constant from 1901 to 1903, and in Perth, where they decreased from 1903 to 1907, and again in 1909, there has been a uniform increase in each metropolitan town during the whole of the period under review. The increase has been greater in Adelaide (where the average rent in 1901 was only 566, compared with 1000 in 1911, and 1051 in 1912), and in Brisbane than in the other towns. It should be observed, however, that at the commencement of the period rents were exceptionally low in Adelaide, and were comparatively low in Brisbane (see Appendix IV. to Report No. 1). The graph for Perth presents features entirely different from those for the other towns; the fall in rents commencing in 1903 and lasting until 1907 is followed, after another temporary decline in 1909, by a rapid rise.

(iii.) *Cost of Living.*—The weighted averages for all four groups are of importance, as indicating the general results of this investigation so far as cost of living is concerned. The following table shews the index-numbers for groceries, food, and house-rent for each metropolitan town, computed to the year 1911 as base (= 1000):—

Cost of Living in Metropolitan Towns, Index-Numbers shewing Weighted Average Results for all Groups (Groceries, Dairy Produce, Meat, and House Rent), 1901 to 1912.

TOWN.	1901.	1902	1903.	1904.	1905.	1906	1907.	1908.	1909.	1910.	1911	1912.
Sydney	866	950	929	846	909	906	898	956	959	965	1,000	1,118
Melbourne	916	951	927	899	924	924	922	976	953	992	1,000	1,111
Brisbane	841	875	863	803	841	853	868	936	930	959	1,000	1,071
Adelaide	817	816	791	763	826	843	845	901	936	953	1,000	1,094
Perth	912	957	964	925	928	909	876	889	878	906	1,000	1,025
Hobart	911	937	941	897	929	942	929	965	998	997	1,000	1,092
Weighted Average*	880	929	910	858	901	902	897	951	948	970	1,000	1,101

* For all capital towns.

NOTE.—The figures shewn in the above table are comparable horizontally, but are not directly comparable in the vertical columns. The index-numbers are reversible.

These figures are shewn separately for each town by the heavy line in the graphs on pages 50 and 51, in comparison with graphs shewing index-numbers for groceries and food, and for house-rents. In all the towns the graphs disclose a distinct upward movement during the period under review, the rise in 1912 being particularly marked.

Generally speaking, prices were low in 1904, high in 1902 and 1908, and still higher in 1912. The general trend of the graph for Perth is different to that for the other towns, owing mainly to the decline in house-rents in that place, which occurred from 1903 to 1907, and again in 1909.

The general result for all the six towns shews that cost of living was slightly over 10 per cent. higher in 1912 than in 1911. The amount of the increase was almost identical in Sydney and Melbourne, and in Adelaide and Hobart. It was somewhat lower in Brisbane than in either of the four towns just referred to, and was least in Perth.

(iv.) *Reversibility of Index-numbers.*—Attention has already been drawn to the fact that index-numbers computed by the aggregate expenditure method adopted in this Report are *really reversible*, so that, if it be desired to ascertain the price-indexes with any year other than that shewn in the tables herein as base, the necessary arithmetical work can readily be performed.

For example, turning to the above table, shewing index-numbers for cost of living, if it be desired to ascertain the index-number for Sydney, with the year 1901 as base (1901 expenditure = 1000), the index-number for 1901 will, of course, be 1000 instead of 866, that for 1902 will be $\frac{950}{866} \times 1000 = 1097$, for 1903 will be $\frac{929}{866} \times 1000 = 1073$, for 1911 it will be $\frac{1000}{866} \times 1000 = 1155$, and so on.

Similarly in regard to all other index-numbers given in this Report, the figures may readily be reversed, so as to shew the relative expenditure with any desired year as base.

5. Relative Cost of Living in Different Towns, 1912.—The index-numbers given in the preceding paragraphs shew changes in the cost of living separately for each individual town during the years 1901 to 1912. The figures given in the table on page 55 shew the relative cost

of living in 1912 in the thirty towns, for which particulars are now being collected. The cost of living in each town is compared with the weighted average for all towns. That is to say, the average expenditure in each town has been weighted by a number representing the population of the town, and a weighted average expenditure for all towns has been computed. Taking this average expenditure as the base ($= 1000$), the relative expenditure in each town is shewn. Owing to the concentration of population in the capital towns, the prices and rents in these towns have a preponderating influence on the weighted average index-numbers for all towns combined.

The first column of the table on page 55 shews the relative cost of groceries and food in the thirty towns specified. The second, third, fourth and fifth columns give similar information in regard to houses of 4, 5 and 6 rooms, and for all houses, respectively. The weighted average for all houses is obtained separately for each of the thirty towns by "weighting" the rent paid for each class of house by the number of houses in each respective class in each town. If houses of any particular size only are included, different results may be obtained. This is evident when it is remembered that the distribution of houses according to number of rooms is substantially different in some of the towns; that is to say, there are a greater number of large, and therefore of relatively more expensive houses, in some towns than in others, and *vice versa*, and consequently the weighted average rents in the former class of towns refer to a larger size of house than in the latter class. Separate results are, accordingly, given for the several classes of houses specified in the table.

The figures in the last four columns furnish results for expenditure on groceries and food, combined with expenditure on rent, for each of the three classes of houses indicated, and also for the weighted average of all houses.

(i.) *Groceries and Food*.—As regards groceries and food, it may be seen that the most expensive towns are in Western Australia, where prices in Kalgoorlie and Boulder are highest. In the other States Broken Hill is the most expensive, followed, in the order named, by Zeehan, Charters Towers, Queenstown, Beaconsfield, Port Pirie and Hobart. Prices were lowest in Mount Gambier and Warrnambool.

(ii.) *House Rent*.—The index-numbers in the fourth column shew that the most expensive town for house rent is Sydney, followed in the order named by Adelaide, Geraldton (W.A.), Melbourne, Goulburn, Geelong and Perth. Rents were cheapest in Beaconsfield and Zeehan.

(iii.) *Cost of Living*.—The last column shews that in regard to cost of living generally (according to the prices and house rents prevailing in the year 1912), the most expensive towns were Kalgoorlie and Boulder, where the cost was 22.5 per cent. above the weighted average. The next towns in point of expense were Geraldton (W.A.); Sydney, Adelaide, Perth and Fremantle, Midland Junction, Bunbury, Broken Hill and Melbourne. The least expensive towns were Beaconsfield, Mount Gambier, Ballarat, Bathurst and Moonta (equal), and Bendigo, in the order named.

As regards the capital towns, it may be seen that Sydney was the most expensive, followed in the order named by Adelaide, Perth, Melbourne and Hobart, Brisbane being the cheapest.

Cost of Living, 1912. Index-Numbers shewing Relative Cost in each of Thirty Towns (including 4, 5, and 6-roomed Houses and all Houses), compared with Weighted Average Cost for all Towns.

Town.	Groceries & Food.	HOUSE RENT.				GROCERIES, FOOD, AND RENT, INCLUDING HOUSES HAVING—			
		4-room'd Houses only.	5-room'd Houses only.	6-room'd Houses only.	All Houses Weight'd Average.	4 Rooms.	5 Rooms.	6 Rooms.	All Houses Weight'd Average.
N.S. WALES—									
Sydney ..	986	1,273	1,213	1,191	1,237	1,078	1,070	1,071	1,082
Newcastle ..	995	645	752	767	688	883	905	900	877
Broken Hill ..	1,186	831	838	814	679	1,073	1,058	1,031	991
Goulburn ..	990	616	843	861	904	871	936	936	957
Bathurst ..	950	635	639	669	672	849	835	833	843
VICTORIA—									
Melbourne ..	949	977	978	996	1,000	958	960	968	969
Ballarat ..	973	477	538	579	624	815	813	809	839
Bendigo ..	976	588	619	647	649	852	844	839	851
Geelong ..	952	719	775	836	854	878	887	904	915
Warrnambool ..	923	715	734	727	747	860	856	844	858
QUEENSLAND—									
Brisbane ..	966	678	696	753	792	874	867	877	899
Toowoomba ..	965	618	701	672	768	854	863	842	877
Rockhampton ..	1,002	625	611	656	694	882	858	858	884
Charters T'w'rs ..	1,134	602	674	646	592	964	965	930	926
Warwick ..	1,003	727	723	718	790	915	900	884	921
S AUSTRALIA—									
Adelaide ..	1,012	1,173	1,245	1,210	1,143	1,064	1,098	1,095	1,062
Moonta, &c. ..	1,074	523	570	618	567	858	851	849	843
Port Pirie ..	1,048	845	793	738	720	983	954	919	922
Mt. Gambier ..	904	606	625	639	640	809	802	793	803
Petersburg ..	1,018	837	840	823	791	960	953	936	931
W. AUSTRALIA—									
Perth ..	1,180	968	971	952	867	1,112	1,103	1,085	1,060
Kalgoorlie, &c. ..	1,471	1,136	1,128	1,103	830	1,364	1,345	1,318	1,225
Mid. Junct. &c. ..	1,209	760	863	875	745	1,066	1,082	1,070	1,081
Bunbury ..	1,231	869	830	842	664	1,115	1,083	1,069	1,013
Geraldton ..	1,237	1,356	1,361	1,235	1,017	1,275	1,288	1,236	1,152
TASMANIA—									
Hobart ..	1,044	821	807	789	816	973	957	938	957
Launceston ..	985	766	801	803	806	915	917	909	916
Zeehan ..	1,142	572	684	685	443	960	973	951	874
Beaconsfield ..	1,054	352	321	310	286	830	784	743	759
Queenstown ..	1,130	711	700	748	548	996	972	971	907
Weighted Average	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Some few words as to the proper interpretation of the above table may not be out of place. The weighted average for all towns represents the price paid, on the average, by the people of all the towns regarded as a single community. In other words, if the people of the thirty towns are paying on the average £1000 for groceries and food, the people in Sydney are paying £986, those in Newcastle £995, and so on. (See column I.) Or again, if the people of the thirty towns are paying on the average £1000 for the four series of items, then those of Melbourne are paying £969, of Ballarat £839, and so on. (See final column.) Thus, in this table, the figures are *comparable vertically*, but are not directly comparable horizontally, and this is to be carefully borne in mind in making comparison. That they are not directly comparable horizontally is immediately evident when it is remembered that each series, or group, for all towns is represented by the one figure—1000—though actually they do not represent equal amounts.

It is proper to observe that these index-numbers are also *reversible*, that is to say, if it be desired to take the expenditure in any particular town as base, the necessary calculations can readily be made. For example, referring to the index-numbers for all groups (see final

column), taking expenditure in Melbourne as the base ($= 1000$ instead of 969), the relative cost in Sydney is— $1082\frac{2}{969} \times 1000 = 1117$; in Brisbane, $899\frac{9}{969} \times 1000 = 928$; and so on. In other words, cost of living is 11.7 per cent. more in Sydney, and 7.2 per cent. less in Brisbane than in Melbourne.

Comparing the first column with the fifth and last columns, it may be seen that the relative costs in the different towns in regard to the two main divisions, and the weighted average for all groups combined, differ considerably. Thus, in Sydney the index number for rent (all houses), is 1237, or 23.7 per cent., above the weighted average for all towns, whereas the index number for groceries and food is 986, or 1.4 per cent. below the average. In Brisbane, on the other hand, the index-number for groceries and food is greater than that for house-rent, both numbers being below the weighted average. In some of the smaller towns, too, especially in the mining districts, it may be seen that rents are very low, and groceries high, compared with the weighted average.

6. Variation in Purchasing Power of Money, 1901 to 1912.—

In several of the tables given in the preceding paragraphs, attention has been drawn to the fact that the index-numbers are not directly comparable either horizontally or else in the vertical columns. The reasons for this were also pointed out. By combining the figures given for the capital towns on pages 53 and 55 (a) shewing variations in cost of living from year to year in each town separately, and (b) shewing relative cost of living in the several towns during the year 1912, results which are in all respects comparable may be obtained. These are shewn in the following table, in which the average cost for the six capital towns in the year 1911 has been taken as the base. This base has been taken as equal to 20s., instead of 1000, as in the former tables.

These figures shew not only the variations in cost of living from year to year in each town separately, but also (in the horizontal lines) the relative cost in the several towns in each year. Thus each value given for any town and year is directly comparable with any other value. It may be seen, for example, that 18s. 2d. in Sydney in 1901 was equivalent to 17s. 5d. in Melbourne, or to 20s. 3d. in Perth in 1906, and to 20s. on the average in all six towns in 1911, and to 23s. 4d. in Sydney in 1912.

Purchasing Power of Money.—Amounts necessary on the Average in each Year from 1901 to 1912 to purchase in each Capital Town, what would have cost on the average £1 in 1911 in the Australian Capitals regarded as a whole.

Year.	Sydney		Melbourne		Brisbane		Adelaide		Perth		Hobart.		Weighted average of 6 Capital Towns	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
1901	28	2	17	3	15	2	17	1	20	4	17	3	17	7
1902	19	11	17	11	15	10	17	1	21	4	17	9	18	7
1903	19	6	17	6	15	7	16	7	21	5	17	10	18	2
1904	17	9	16	11	14	6	16	1	20	7	17	0	17	2
1905	19	1	17	5	15	2	17	3	20	8	17	7	18	0
1906	19	0	17	5	15	5	17	8	20	3	17	10	18	0
1907	18	10	17	4	15	8	17	8	19	6	17	7	17	11
1908	20	1	18	5	16	11	18	10	19	0	18	3	19	0
1909	20	2	17	11	16	10	19	7	19	6	18	11	19	0
1910	20	3	18	8	17	4	19	11	20	3	18	10	19	5
1911	21	0	18	10	16	1	20	11	22	3	18	11	20	6*
1912	23	4	20	11	19	4	22	11	22	10	20	8	22	0

* BASIS OF TABLE.

The figures given in the vertical columns of the above table are *relatively* identical with those given in the horizontal lines in the table on page 53, while those in the horizontal line for the year 1912 are *relatively* identical with those given for the same towns in the table on page 55.

The table also illustrates a feature which has not hitherto been directly dealt with, viz., the relative cost of living in the six towns during each year from 1901 to 1912, inclusive. This is shewn in the horizontal lines. It may be seen that while the cost of living was least throughout the period in Brisbane, it was greatest up to, and including, the year 1907 in Perth. Owing mainly to the fall in house rents, cost of living in the latter town was less in 1908 than in Sydney and in 1909 than in either Sydney or Adelaide. In 1910, however, rents in Perth increased, and in that year Sydney and Perth are bracketed equal as the most expensive towns. In 1911 there was a rapid increase in both prices of groceries and house rent in Perth, and that town was accordingly the dearest, but in 1912 the prices of groceries fell, while the prices of dairy produce and meat did not increase as rapidly as in other towns, with the result that cost of living in that year was greater in both Sydney and Adelaide than in Perth. The effect of the variations in price and rent levels on the relative cost of living may be better appreciated by reference to the graphs on pages 50 and 51.

7. **Monthly Fluctuations in Cost of Living, 1912.**—The year 1912 being the first year for which monthly returns were collected for the thirty towns in the Commonwealth, a special investigation was made in regard to monthly and seasonal fluctuations in price. The weighted average results for all the thirty towns are shewn in the following table, the index-numbers for each month being computed with the average prices for the whole year as base (= 1000). In the last column a corresponding index-number for the month of January, 1913 (computed to the same base) is shewn. The *seasonal* fluctuations are practically confined to prices of food and groceries, the quarterly returns of house rents being generally fairly constant or else shewing a slight upward tendency during the year. Index-numbers for groceries and food alone and also combined with house rent are shewn in the table. It will be seen that the inclusion of house rent naturally has a steadying effect on the amount of *range* in cost of living.

Monthly Fluctuations in Prices of Groceries and Food and Cost of Living, Weighted Average Results for Thirty Towns, 1912.

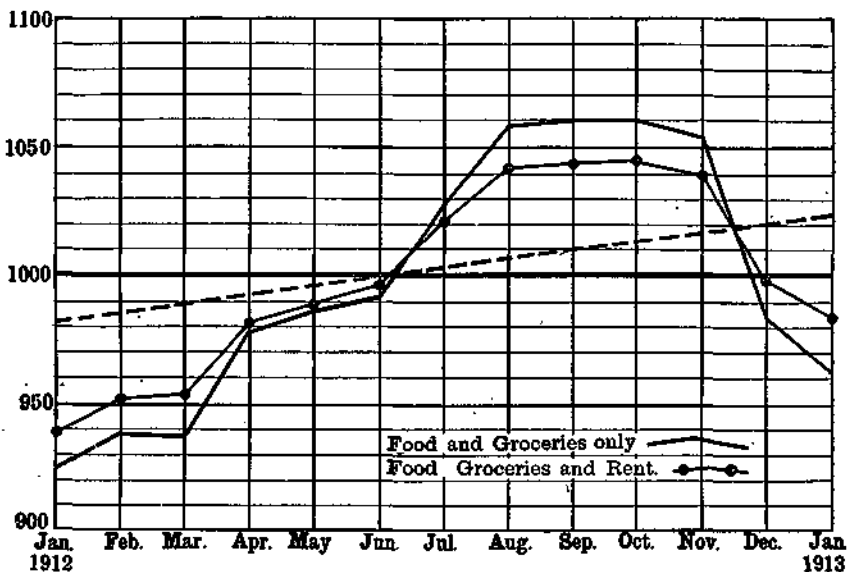
Particulars.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov	Dec	Whole Year	Jan.
													1911.	1913.
Groceries & Food	925	938	937	978	986	992	1,028	1,058	1,060	1,060	1,054	984	1,000	983
Groceries, Food, and House Rent	939	952	953	981	989	996	1,021	1,042	1,044	1,045	1,040	997	1,000	984

The significance of these figures may be more readily appreciated by reference to the following graphs, from which it may be seen that cost of living increased each month from January to September, inclusive. There was a slight decline in November, followed by a heavy

fall in December. In January, 1913, the level was considerably higher than in the same month in the previous year. This shows that, in addition to the increase during the year owing to seasonal fluctuations, there has also been a general increase in cost of living, which is reflected in the index numbers already given (see p. 53 and graphs on pages 50 and 51).

In the absence of fuller information as to the nature of the annual progression itself (which can only be to hand in the future, and when later results have been obtained) the best indication of the monthly fluctuation is obtained by supposing the annual changes in price-level to be equal to the difference between the levels in January, 1912, and January, 1913, and to be represented by the dotted lines shewn on the graph.

Seasonal Fluctuations in Cost of Living, 1912.



8. Cost of Living in Northern Territory, 1913. — Returns have been received for the month of January, 1913, in regard to retail prices in Darwin. No particulars as to house rents are, however, yet available. The retail prices, which are shewn in detail in Appendix II., give the following results compared with average prices in the other thirty towns in the Commonwealth for which data are collected:—

Northern Territory.—Cost of Living compared with average for Thirty other Towns in Commonwealth, January, 1913.

Particulars.	I. Groceries	II. Dairy Produce.	III. Meat.	IV. Food and Groceries *
Average 30 Towns ..	1,000	1,000	1,000	1,000
Darwin	1,595	1,302	1,284	1,404

* Weighted average of Groups I., II., and III. combined.

These results shew that in January, 1913, cost of food and groceries in Darwin was over 40 per cent. more expensive than the average for the other towns of the Commonwealth for which returns are collected.

9. **Tables of Prices and House Rents, 1912.**—While it is intended to publish summarised results of price-movements quarterly, the actual data upon which the investigation is based will be published only annually. In the Appendixes to Report No. 1 particulars were given of prices and house rents in the metropolitan towns in each year since 1901.

In Appendix II. hereof particulars are given of average prices in 1912 for each of the thirty towns from which returns are collected, and in Appendix III. similar information is given in regard to house rents.